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CURRENT LITERATURE.

The Kew Index.

The completion of this great work deserves special recognition, although the previous parts have been already noticed in this journal. It is difficult to overestimate its value to all those who deal with the names of flowering plants, and associated as it is with the name of Darwin, it becomes another proof of his sagacity. Drs. Hooker and Jackson and the staff at Kew are to be congratulated upon its prompt appearance, as well as upon its contents. With its 1,300 large closely printed pages of three columns each, it suggests an amount of work that is fairly appalling, and that could only have been accomplished within reasonable time with such force and material as are to be had at Kew. First appearing in 1893 it is a completed work in 1895, and hence is one of the few large works that is practically synchronous throughout. Botanists have already consulted it too extensively to need information as to its plan and purpose. The title page suggests that it is an "index to the names and authorities of all known flowering plants and their countries," with 1885 as the most recent date. In so vast a work it is impossible to avoid oversights and mistakes. It is only a wonder that they are not more numerous. Monographers will occasionally find that the reference cited is not the original one, but it usually takes a monographer to discover that.

There is one feature that we could wish had been different, and that is the matter of synonymy. A work of such great extent can not pretend to have made a monographic study of its whole field, and, therefore, much of the synonymy must be uncertain. We do not doubt that there is great familiarity with all plant groups at Kew, but in such a tremendous bibliography as the Index indicates, many of the expressions of opinion must have been "off-hand." It has seemed to us that if the Index had been a simple list of plant names, with no indications of synonymy, it would have been a fairer representation of the real value of the work. All questions of identity and of nomenclature might as well have been avoided, and the book made a record of fact rather than opinion. As it is, one can not be sure of the synonymy without investigation; and, if investigation be needed, what is the special value of the synonymy except by way of suggestion? This, if rightly understood, however, does not interfere in the least with the usefulness of the book, and botanists are under large obligation, as they have ever been, to Kew and Mr. Darwin.

The Synoptical Flora of North America.

When in the year 1878 Dr. Asa Gray's *Synoptical Flora* began to appear, botanists the world over hoped that the distinguished author would be permitted to complete it in a few years. In this way his vast experience with North American plants could be brought to the aid of subsequent botanists. The gamopetalous orders after *Compositæ* were the first to appear; then in 1884 the remaining gamopetalous orders. In 1886 a revision of these two parts, representing all our *Gamopetalæ*, was issued by the Smithsonian Institution. Ever since this has been the only part of our flora presented with any completeness, although monographs here and there have helped us out. The polypetalous orders were next attacked, and at Dr. Gray's death he had the work fairly outlined to the *Leguminosæ*. Certain large groups had been deferred, and these Dr. Watson was working upon at his death, in 1892. Now, seventeen years after the appearance of volume II, part I, the first fascicle of volume I, part I, has appeared,¹ under the editorship of Dr. Robinson, the third editor.

Dr. Robinson's task was a difficult one, for not only was he called upon to continue the work of our greatest systematist with work of reasonably equal quality, but he was compelled also to adopt a style of presentation not his own. It can be said without reserve that he has succeeded admirably, and that the part before us is a worthy companion of those we have already had. Recent questions of nomenclature cut no figure in a work whose mould was cast twenty years ago, while its great body of facts comes to us as the really desirable thing after all. The reviewer cannot but remember that Dr. Gray was a very progressive man, and is inclined to think that his successors have been handicapped by a rigid tradition.

Among the seventeen orders presented, interest naturally centers about the two largest, *Ranunculaceæ* and *Cruciferae*, the former being the work of Dr. Gray, the latter the joint work of Drs. Watson and Robinson. An excellent editorial feature is found in the numerous footnotes giving supplementary references and information. The greatest pains have been taken to properly credit everything, all the recent species interpolated in the original manuscripts of Drs. Gray and Watson being indicated. In fact the whole work gives abundant evidence of the most painstaking care, and if anything pertinent has escaped mention it is certainly because it has escaped notice. It is out of the question to comment upon the numerous new forms de-

¹ GRAY, ASA; WATSON, SERENO; and ROBINSON, BENJAMIN LINCOLN: *Synoptical Flora of North America*, Vol. I, Part I, Fascicle 1. Polypetalæ from the *Ranunculaceæ* to the *Frankeniaceæ*. American Book Co., New York, Cincinnati, and Chicago. Issued October 10, 1895.

scribed and the numerous opinions expressed in such a work. It will soon be in the hands of all working botanists, and it is sufficient to say that it is worthy of its predecessors. The history of this work, as of all extensive works undertaken by a single man, emphasizes the fact that although there may be a gain in uniformity, there is certainly a great loss in timeliness, and that such works are usually abandoned before completion. It is generally too difficult an undertaking, when one considers the extremely rapid evolution of botanical science, to profitably complete in uniform style a work which has been begun in a preceding generation. Now that we have seen the quality of Dr. Robinson's work we wish, as we have done for seventeen years, that some plan could be devised by which its completion could be hastened.

Saccardo's *Sylloge Fungorum*.

Another massive volume has now been added to the monumental work by Professor Saccardo¹ enumerating all described species of fungi. Ten volumes have previously been published, embracing descriptions of 38,163 species, to which the present volume adds 4,220 species. Of these 1,165 are North American fungi, chiefly new species published since June, 1892, an average of nearly 400 per year. They comprise Hymenomycetes, 118; Gasteromycetes, 14; Uredineæ, 92; Ustilagineæ, 17; Phycomycetes, 11; Pyrenomycetes, 388; Discomycetes, 101; Laboulbeniaceæ, 88; Saccharomycetes, 5; Myxobacteriaceæ, 9; Myxomycetes, 24; Sphaeropsideæ, 233; Melanconieæ, 68; Hyphomycetes, 44; Fossil Fungi, 3. The very rapid increase in the number of known fungi makes such a publication as the *Sylloge* one of great value to every working mycologist. This list of more than four thousand species is almost entirely the product of the botanical activity of only the last three years, and there is no likelihood of diminution for some time to come. The diversity in the methods and places of publication is astonishingly wide, and the necessity of such a work to one who desires to keep abreast of the mycologic literature is evident at a glance. To mention but a single illustration: of the ninety-two species of Uredineæ cited from North America, the original descriptions are published in twelve different periodicals, four of which are foreign. Other orders and regions might furnish even more conspicuous evidences of the indispensable character of the work.

¹Saccardo, P. A.: *Sylloge fungorum omnium hucusque cognitorum. Supplementum universale. Pars III. Adjectus est index operis universalis. Vol. XI. Patavii, July 1895. Roy. 8vo. 753 pp. 48 francs.*

Handbook of British Fungi.

The modernization of Cooke's *Handbook* has reached the fourth volume. Although at first promised in three volumes, the enumeration has not yet been completed with a fourth one. The first two volumes have already been noticed.¹

The two volumes² before us closely resemble the previous ones in their make up, with possibly some improvement in the execution of the illustrations.

The first two volumes with 268 pages of the third volume disposed of the Basidiomycetes. The remainder of the third volume treats of the Hyphomycetes; and the fourth volume takes up a portion of the Ascomycetes. There yet remain the Pyrenomycetes, Tuberaceæ (both in the table of contents of the fourth volume, but not otherwise appearing in it), Uredineæ, Ustilagineæ, Saccharomycetes, Myxomycetes, Phycomycetes, and some others, which together form about 38 per cent. of the contents of Cooke's *Handbook*. It looks very much as if two more volumes, at least, will be required to describe the remainder of the British fungus-flora. It is much to be hoped that the work will be continued until completed.

Much labor has been expended in the examination of type specimens, the augmentation and correction of the diagnoses, and the addition of spore measurements. Of the nomenclature it only need be said that about the expected number of changes occur, without any apparent attempt to adopt the radical methods which have recently come into vogue. A critical examination into the value of the new species and genera³ and the shifting of the old ones would lead us too far.

The work is a welcome and valuable one as it stands, but it will be rendered far more useful if a general synopsis of the groups and a universal index are provided with the last volume.

Minor Notices.

A CAREFULLY PREPARED catalogue of varieties of wheat was issued in 1850 by the distinguished Louis L. de Vilmorin, based upon material which had been in process of collection for twenty years or more. This collection has continued to grow, and in 1889 a new catalogue was issued by the eminent Henry L. de Vilmorin, and now a

¹18: 31, 240. 1893.

²Massee, George. British fungus-flora; a classified textbook of mycology. London, Geo. Bell & Sons. Vol. III, 1893. 512 pp. Vol. IV, 1895. 522 pp. 12mo.

³Cf. BOT. GAZ. 20: 431. 1895.

second edition of the same is published.¹ It will prove of great service to students of wheat, both from the standpoint of the botanist and the cultivator. The finely engraved plates show heads of many varieties full size.

THE ANNUAL VOLUME from the U. S. Department of Agriculture² has taken on a new and greatly improved form. The report covering the year 1894 makes a volume of 608 pages well illustrated and printed, and attractively bound. The subject matter has also been put into a more pleasing form, and the quality carefully considered. It is a volume of information on important subjects, and probably the most valuable one ever issued by the Department. If this high standard is maintained (there is a promise that it will be raised), the questionable reputation of the annual volume must shortly give place to a well grounded esteem.

THOSE INTERESTED in the cultivation of greenhouse and window plants will find an excellent little book on the subject, just issued by Macmillan & Co. It is entitled "Greenhouse and window plants," by Charles Collins, and is sold for 40 cents. The excellent directions for the construction and management of greenhouses will be of great service also to departments of botany desiring such facilities.

A HANDBOOK OF GRASSES, by William Hutchinson, has been issued,³ whose purpose is to popularize the study of that group. The British species are presented, with the aid of small woodcuts, preceding which there is a general discussion of structure of grasses. The groups are arranged for the convenience of field work, rather than in any natural order. There is the "agrarian group," the seashore group, the alpine group, etc. In the closing pages the subjects of geographical distribution and uses are rather fully presented.

¹ VILMORIN, HENRY L. DE.—Catalogue méthodique et synonymique des froids qui composent la collection de Henry L. de Vilmorin. 2nd ed. 8vo. 88pp. 16 pl. Paris, Vilmorin-Andrieux & Cie. 1895.

² Yearbook of the United States Department of Agriculture for 1894. 8vo. 608pp. 6 pl. and other illustrations. Washington, Gov. Printing Office, 1895.

³ HUTCHINSON, WILLIAM.—Handbook of grasses, treating of their structure, classification, geographical distribution, and uses, also describing the British species and their habitats. Small 8vo. pp. 92. illustrated. London: Swan Sonnenschein & Co., New York: Macmillan & Co. 1895. 75 cents.